Blends of poly[.alpha.-methylenelact(one)(am)] homo-and copolymers

Description of Technology: Polymers containing repeat units derived from .alpha.-methylenelact(ones)(ams) such as .alpha.-methylenebutyrolactones and which have reactive groups are toughened by mixing with a rubbery material which has complimentary reactive groups, or polymers containing repeat units derived from .alpha.-methylenelact(ones)(ams) are toughened by mixing with polymeric core-shell particles having an elastomeric core and a specified thermoplastic shell; or blends of polymers containing repeat units derived from .alpha.-methylenelact(ones)(ams) with thermoplastics often yield compositions which have a higher modulus and/or heat deflection temperature than the thermoplastic alone.

Patent Listing:

1. **US Patent No. 6,992,141**, Issued January 31, 2006, "Blends of poly[.alpha.-methylenelact(one)(am)] homo-and copolymers"

http://patft.uspto.gov/netacgi/nph-Parser?Sect2=PTO1&Sect2=HITOFF&p=1&u=%2Fnetahtml%2FPTO%2Fsearch-bool.html&r=1&f=G&l=50&d=PALL&RefSrch=yes&Query=PN%2F6992141

Market Potential: Thermoplastics comprise a large body of commercially important products. Among the uses of thermoplastics are those in which the optical properties of the polymer are important, particularly when the polymer is an optically clear material with little distortion of optical images. Such polymers, for example poly(methyl methacrylate) (PMMA) and certain polycarbonates are used as substitutes for glass where toughness is important. In uses such as for safety glazing and signage, other properties such as weather and/or heat resistance may also be important. For example if such a part needed to be thermally sterilized, it must withstand the temperature of the sterilization process. Polycarbonates often have poor weathering and/or hydrolysis resistance, while PMMA has a relatively low glass transition temperature (Tg), so its heat resistance is poor. Thus polymers with a combination of good optical properties, and heat and weathering resistance are desired.

Benefits:

- Improved optical properties
- Heat and weathering resistant

Applications:

- Thermoplastics

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